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TENDENCIES OF CONTEMPORARY
MEDICINE

We are living in an epoch of profound transformations, which challenge the established order in which we have been brought up and even call in question matters which in our pride we had regarded as fixed and assured. These changes show the relativity of our points of view and our conceptions. The state of flux shows up in all domains—economic, political, social, scientific, and philosophic. A revision of values, a readaptation, is demanded on all sides. At the end of the last century men put material things first; they looked at the things of life from outside, ignoring often the human values. Now there is a growing sense of the needs of man and study of his reactions to his surroundings. It is not possible to separate the future of medicine from this new humanism.

In a subject of such comparatively recent origin as scientific medicine we must expect growing pains, and in his essay on the tendencies of modern medicine Dr. Delore¹ of Lyons suggests that one of these crises is upon us. He accepts Professor Harvey Cushing's description of medicine as at the cross-roads. Medicine of the nineteenth century and even of to-day is predominantly, almost exclusively, analytical. This has occurred because all the ancillary sciences in the training of the medical student are in essence analytical. The spirit of the laboratory has tended to supplant the clinical sense. Each problem is tackled as an entity. This method leads only to erudition, the accumulation of isolated facts; and the broad general principles, the science, and the plan are left in abeyance. Further, there is separation of man into mind and body, of man from his surroundings. Delore sees as consequences of this attitude a predominance of the morphological sciences, an increase of specialization to the detriment of general culture, materialism, and, more particularly, a one-sided view of the problems of infection and immunity, emphasizing the role of the infecting agent and neglecting the equally important reactions of the host. The tendency has been to accumulate material, and this is useless unless subjected to a succeeding process of synthesis. Medicine should become more human,

treating the whole man as one psycho-physical complex. Medicine in future must serve the man, whether thinking, working, or suffering. Medicine thus interested in the study of the person must turn more and more to consider the disturbance of function. This point of view is developed on philosophical lines by von Bergmann in a book reviewed at page 74 this week. The accurate knowledge of the first change in function, the real onset of the disease, leads to an earlier diagnosis in the pre-clinical stage. Thus preventive medicine must be for the individual not only preventive but abortive.

The remarkable advances in the science of bacteriology during the last fifty years have led to neglect of the diseased person, the terrain. But there is need to return to Claude Bernard, who taught that the microbe is nothing, it is the terrain that is all. Of the two factors in disease it is the terrain, the soil, the reacting capacity of the individual, which is the more important; it is this which controls the morbid reaction. Taking as examples of morbid processes cancer, tuberculosis, and infectious diseases, not only because of their importance in pathology but because they give striking instances in his argument, Delore notes in cancer the fundamental role of the terrain or soil; there is lack of specificity of the exciting or occasional factors. In tuberculosis both the bacilli and the terrain are of importance. In the infectious diseases the terrain intervenes least; the external agent appears to have the preponderating part. But even here there is over-emphasis of the part played by the infecting bacteria. Often there is an absence of contagion; epidemics vary in character in a way inexplicable on strictly bacteriological lines; very often the microbe is latent and the disease sets in unexpectedly; in many infections no determined microbe is found, and filterable viruses are postulated; there is much mutability and pleomorphism of bacterial agents. All points to need for considering the terrain or soil. In tuberculosis the real acquisitions in therapy are outside the domain of bacteriology. The revival of the age-old triad, rest, fresh air, good food, is directed not against the microbe but to aid the general state. The method of artificial pneumothorax is a clinical acquisition.

It is thus that Delore is brought to the position that the future medicine is the treatment of the patient with physical and psychological measures. These measures may be simple: dieting, fasting, physical therapy and exercise, the treatment with drugs in the optimal, even minimal, therapeutic doses. They are the revival of the lessons of clinical experience. To assure the diagnosis, determining the pathological lesions to be verified post

¹ *Tendances de la Médecine Contemporaine. La Médecine à la Croisée des Chemins.* By P. Delore. Paris: Masson et Cie. 27 fr.

mortem was too much the aim of recent medicine, as if treatment were only a concession to the demands and prejudices of the public. In future use must be made of all the lessons of empiricism; even methods at present outside the pale of classical therapeutics are to be explored, and if found helpful brought into use. There is to be a revival of research into methods of treatment, and collaboration between teachers of medicine and surgery and the staffs of the hospital services, with veterinarians, with the health officers and family physicians. The author urges the foundation of an institute of therapeutics which shall control and investigate not only the traditional and empirical measures but even explore what is valuable in charlatanism. Amid much overstatement Delore has produced a stimulating book, one that deserves consideration because of its enthusiasm for the progress of medicine and the good of mankind. His underlying hope is to bring about a synthesis which will advance the science of man.

THERAPIA STERILISANS MAGNA

Sterilization of the blood stream by chemical means has been looked upon more and more as an unattainable ideal. Many procedures undertaken with this object in the not far distant past are now recognized to have been futile. Indeed it is difficult to account for the optimism which allowed the intravenous injection of eusol, and although salts and compounds of mercury are not quite so obviously unsuited to this use abundant proof has been available for years that they are powerless to kill bacteria under such conditions. These are by no means the only supposed remedies for septicæmia which have "had their day and ceased to be," and hence there must have been reservations in many minds when it was announced last year that a dye compound synthesized in the Bayer laboratories had been found bactericidal for hæmolytic streptococci *in vivo*.¹ The earlier phases of work with prontosil have been described in these columns,² and we need only recall here that the compound was found by a number of workers to be capable of curing experimental streptococcal infection in mice, although its bactericidal action *in vivo* was negligible; its mode of action was therefore unexplained. A steady stream of clinical reports, mainly from Germany but including one of considerable weight from this country, also testified to its efficacy in the human subject. Two further papers which have now appeared carry this research an important stage further. Colebrook and Kenny³ add to their previous series of cases

of puerperal sepsis a further twenty-six treated by prontosil with not a single death, although six were septicaemic. A more striking tribute to the value of this form of treatment is not conceivable, and the fact that the mortality of the disease shows signs of a spontaneous decline, although interesting and welcome in itself in so far as it can be accepted as true, does not invalidate the obvious conclusion from so notable a success. The investigations of Colebrook, Buttle, and O'Meara⁴ are of equal interest from a different standpoint, in that they promise to transfer this treatment from a purely empirical to a rational basis.

It was suggested some time ago by Tréfouel, Nitti, and Bovet⁵ that prontosil does not act in the body as such, but is converted into another compound, para-amidobenzene sulphonamide.⁶ Buttle and his colleagues, acting on this assumption, have found that this compound has unique bactericidal properties, being capable in enormous dilution of killing streptococci in blood, provided that the number of bacteria in the mixture is small, as, of course, it is in the clinical condition of septicaemia. We believe this to be the first occasion on which any germicide has been proved capable of killing bacteria in blood in a concentration attainable in the blood of a patient. If the obvious interpretation of these experiments is accepted the forty-year-old ideal of "therapia sterilisans magna," so far from receding into the domain of medical mythology, has at one step taken its place as a concrete fact of daily practice. It remains to be seen whether "sulphonamide" possesses the therapeutic powers which these experiments and reasoning suggest; it may prove superior to prontosil itself, and it has the extraordinary feature in a remedy of this kind, and one which will encourage its free employment, of being administrable only by the mouth. It also remains for surgeons and physicians in this country, as well as obstetricians, to make their own observations on its value in the treatment of streptococcal infections in general. So far the studies of puerperal fever in the isolation wards of Queen Charlotte's Hospital have been the only reported attempts in England to evaluate this treatment on an adequate scale. Although the opportunities there are admittedly exceptional it should be possible elsewhere to study its effect on a sufficient series of cases of surgical sepsis; and throat infections, scarlatinal or otherwise, offer an abundance of clinical material. Lastly, there are indications that other bacteria may be susceptible to the action of this remedy. These certainly do not include either the pneumococcus or streptococci other than *S. pyogenes*, but reports of cures of

¹ *British Medical Journal*, 1936, 1, 590.

² *Ibid.*, 1936, 1, 1216.

³ *Lancet*, 1936, 2, 1319.

⁴ *Lancet*, 1936, 2, 1323.

⁵ *C. R. Soc. Biol.*, Paris, 1935, 120, 756.

⁶ Now marketed by Bayer Products Ltd. as prontosil album.